



AGM BATTERY NS Series

NS4-4.5 (4V 4.5Ah)



The rechargeable batteries are lead-lead dioxide systems. The dilute sulfuric acid electrolyte is absorbed by separators and plates and thus immobilized. Should the battery be accidentally overcharged producing hydrogen and oxygen, special one-way valves allow the gases to escape thus avoiding excessive pressure build-up. Otherwise, the battery is completely sealed and is, therefore, maintenance-free, leak proof and usable in any position.

Battery Construction

| | | | | | | | | |
|---------------------------|--------------------------------|------------------------|------------------|--------------|------------------------|-------------------------|-------------------------|------------------------------|
| COMPONENT Raw material | POSITIVE PLATE Lead dioxide | NEGATIVE PLATE Lead | CONTAINER ABS | COVER ABS | SAFETY VALVE Rubber | TERMINAL Copper/Plug | SEPARATOR Fiberglass | ELECTROLYTE Sulfuric acid |
|---------------------------|--------------------------------|------------------------|------------------|--------------|------------------------|-------------------------|-------------------------|------------------------------|

Performance Characteristics

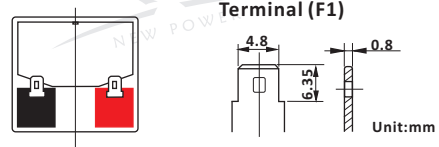
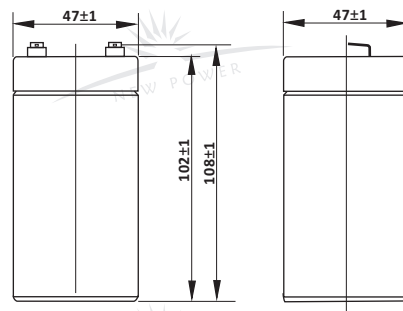
- **Nominal Voltage** 4V
- **Number of Cell** 2
- **Nominal Capacity (77°F /25°C)**
 - 20 Hour rate (0.225A, 3.5V) 4.5Ah
 - 10 Hour rate (0.43A, 3.5V) 4.3Ah
 - 5 Hour rate (0.78A, 3.5V) 3.9Ah
 - 1 Hour rate (2.8A, 3.2V) 2.8Ah
- **Internal Resistance**
 - Fully charged battery (77°F /25°C) 25mΩ
- **Capacity affected by temperature (10 hour rate)**
 - 104°F (40°C) 102% 32°F (10°C) 85%
 - 77°F (25°C) 100% 5°F (-15°C) 65%
- **Self-Discharge 68°F (20°C)**
 - Capacity after 3 month storage 90%
 - Capacity after 6 month storage 80%
 - Capacity after 12 month storage 60%
- **Max. discharge current 77°F /25°C** 67.5A(5S)
- **Charge Methods: constant voltage charge 77°F /25°C**
 - Cycle use 4.85 ~ 4.90V
 - Max. Current 1.13A
 - Standby use 4.54 ~ 4.60V

General Features

- **Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance or water adding.**
- **Not restricted for air transport-complies with IATA/ICAO Special Provision A67.**
- **A recognized component of CE and UL**
- **Computer designed lead, calcium tin alloy grid for high power density.**
- **Long service life, float or cyclic applications.**
- **Maintenance-free operation.**
- **Low self discharge**
- **Design life 5 years**

Dimensions and Weight

| Type | Length | Width | Height | Total Height | Approx. Weight |
|---------------|----------|----------|----------|--------------|----------------|
| SI Units | 47mm | 47mm | 102mm | 108mm | 0.52Kg |
| English Units | 1.85inch | 1.85inch | 4.02inch | 4.25inch | 1.15lbs |



Constant Current Discharge (Amperes at 77°F/25°C)

| V/cell | 5min | 10min | 15min | 30min | 1h | 3h | 5h | 10h | 20h |
|--------|------|-------|-------|-------|------|------|------|------|-------|
| 1.60 | 15.8 | 11.0 | 8.90 | 4.80 | 2.80 | 1.25 | 0.87 | 0.46 | 0.233 |
| 1.65 | 15.0 | 10.5 | 8.52 | 4.62 | 2.70 | 1.20 | 0.84 | 0.45 | 0.231 |
| 1.70 | 14.1 | 10.1 | 8.10 | 4.40 | 2.60 | 1.15 | 0.81 | 0.44 | 0.228 |
| 1.75 | 13.3 | 9.58 | 7.65 | 4.23 | 2.50 | 1.10 | 0.78 | 0.43 | 0.221 |
| 1.80 | 12.4 | 9.00 | 7.20 | 3.95 | 2.40 | 1.05 | 0.75 | 0.42 | 0.221 |

Constant Power Discharge (Watts at 77°F/25°C)

| V/cell | 5min | 10min | 15min | 30min | 45min | 1h | 2h | 3h | 5h |
|--------|------|-------|-------|-------|-------|------|------|------|------|
| 1.60 | 29.0 | 19.4 | 16.1 | 9.42 | 7.34 | 5.55 | 3.54 | 2.53 | 1.82 |
| 1.65 | 27.2 | 18.3 | 15.3 | 8.94 | 7.00 | 5.31 | 3.43 | 2.46 | 1.79 |
| 1.70 | 25.4 | 17.1 | 14.4 | 8.46 | 6.65 | 5.07 | 3.31 | 2.39 | 1.75 |
| 1.75 | 23.6 | 16.0 | 13.5 | 7.96 | 6.29 | 4.81 | 3.18 | 2.32 | 1.72 |
| 1.80 | 21.8 | 14.8 | 12.6 | 7.46 | 5.92 | 4.55 | 3.04 | 2.24 | 1.67 |

(Note: The above characteristics data are average values obtained within three charge/discharge cycles not the minimum values.)



